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MOUNTING ARRANGEMENT FOR CRT SOCKET BOARDRECEIVED
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TECHNOLOGY CENTER 2800**Field of the Invention**

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This invention relates to a socket for a cathode ray tube (CRT) in which the socket is part of a printed circuit board.

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JWM
WLS**Background of the Invention**

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In modern television display apparatus, a socket for the electron gun of a CRT is constructed as part of a printed circuit board which may contain one or more video output amplifiers. This is done in order to keep the connections, between the outputs of the video amplifiers and the electrodes of the electron gun, as short as possible so as to avoid degradation of the video output signals, whose frequencies may exceed 5 megahertz. Generally, the socket for the CRT is mounted on the circuit board, so that when the socket is engaged with the CRT, the circuit board is positioned at the rear of the CRT with the socket. The trend in modern CRT displays is to shorten the distance from the screen end of the cabinet to the rear of the cabinet. This can be accomplished in several ways. For example, a greater deflection angle will shorten the funnel portion of the CRT. At the present time, the largest deflection angle in commercial television apparatus is 110°.

Summary of the Invention

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The instant invention allows further shortening of the cabinet by shortening the protrusion of the CRT socket board beyond the end of the neck of the CRT. The invention provides an arrangement for coupling a CRT to a socket which is mounted on a circuit board, in which the CRT has a funnel and a neck containing an electron gun. The

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terminals for the electron gun are mounted along a circumferential surface of the neck of the CRT. The circuit board is positioned with a first side which faces the funnel and a second side which faces away from the funnel. The socket has electrical contacts which engage corresponding terminals on the neck portion of the CRT. The socket electrical contacts are positioned on the second side of the circuit board. In this way, the socket and circuit board may be positioned with only a minimum protrusion to the rear of the end of the neck of the CRT.

Brief Description of the Drawings

In the Drawing:

The sole FIGURE shows an exploded view of a socket board and the rear portion of a CRT.

Detailed Description of the Invention

The sole FIGURE shows a cathode ray tube (CRT) 18 having a funnel 20 and a neck 22 which contains an electron gun 26. The terminals 24 which connect to electron gun 26 are fed through a side of the neck 22 and lie along a circumferential surface 23 of neck portion 22. The invention is equally applicable to a cathode ray tube whose gun terminals exit through an end 25 of neck 22 and are folded forward along the circumferential surface 23 of neck 22. Socket board 34 has electronic components 16 mounted thereon together with CRT socket 10 which contains electrical contacts 28. Electrical contacts 28 serve as terminals to connect to CRT terminals 24. Components 16 may be mounted on either side of socket board 34, as long as no component extends away from the funnel of the CRT further than the end of socket 10. Socket 10 is mounted on the

side of the circuit board facing away from the funnel 20 of CRT 18. When socket 10 is engaged with the neck 22 mating the parts in the direction shown by arrow 32, there is substantially no protrusion of any portion of socket board 34 beyond the end 25 of neck 22. Socket 10 is provided with a back cover 12 which abuts the end 25 of neck 22, and
5 assists in properly positioning electrical contacts 28 with respect to terminals 24. The Applicant has found that the use of the invention may reduce the depth of the cabinet by three to four centimeters.

Abstract

A socket for a cathode ray tube (CRT) forms part of a circuit board. The socket is positioned on the side of the circuit board away from the funnel of the CRT. The
5 terminals which couple to the electron gun of the CRT are positioned along a circumferential surface of the neck of the CRT, so that when the socket is engaged with the CRT, there is substantially no portion of the socket board which protrudes beyond the end of the neck of the CRT.